

Appl. No. : 10/042,775  
Filed : January 8, 2002  
Response to : Office Action dated August 29, 2003

**AMENDMENTS TO THE CLAIMS**

Please amend Claims 1, 2, 3, 7, 9, 10, 12, 17, 18, 21, 23, and 26 as follows. Please cancel Claim 22.

1. (currently amended) A method for recombinantly producing functional ataxia-telangiectasia (ATM) protein, comprising:

providing a viral vector comprising a ~~gene~~-cDNA encoding the ATM protein operably linked to a promoter;

infecting ATM deficient mammalian cells with said viral vector, wherein said mammalian cells are thereby made to produce functional ATM protein; and

isolating said functional ATM protein produced by said mammalian cells.

2. (currently amended) The method of Claim 1, wherein said viral vector comprising a ~~gene~~-cDNA encoding the ATM protein operably linked to a promoter is a vaccinia viral vector.

3. (currently amended) The method of Claim 1, wherein said viral vector comprising a ~~gene~~-cDNA encoding the ATM protein operably linked to a promoter is a variola viral vector.

4. (cancelled)

5. (original) The method of Claim 1, wherein said promoter is a synthetic early/late viral promoter.

6. (original) The method of Claim 1, wherein said mammalian cells are human cells.

7. (currently amended) The method of Claim 1, wherein said ATM deficient mammalian cells are HeLa cells.

8. (cancelled)

9. (currently amended) The method of Claim 1, wherein said ATM deficient mammalian cells are L3 cells.

Appl. No. : 10/042,775  
Filed : January 8, 2002  
Response to : Office Action dated August 29, 2003

10. (currently amended) The method of Claim 1, further wherein said ATM-deficient mammalian cells producing said functional ATM protein exhibit regain of ATM function.

11. (original) The method of Claim 1 wherein isolating said functional ATM protein comprises binding an anti-ATM antibody to said ATM protein.

12. (currently amended) The method of Claim 1, where said ~~gene~~-cDNA encoding the ATM protein is modified to comprise a FLAG epitope.

13. (original) The method of Claim 12, wherein isolating said functional ATM protein comprises binding an antibody specific for the FLAG epitope to said ATM protein.

14. (previously presented) The method of Claim 1, wherein said functional ATM protein is produced at a level of greater than 2  $\mu$ g substantially purified ATM protein per 300 grams fresh weight of host cells or host tissue.

15. (original) The method of Claim 1, further wherein said functional ATM protein is capable of phosphorylating ATM substrates.

16. (original) The method of Claim 15, wherein said substrates comprise p53 and PHAS-1.

17. (currently amended) A method for recombinantly producing ~~a high-yield of~~ functional ataxia-telangiectasia (ATM) protein, comprising:

providing a vaccinia viral vector comprising a ~~gene~~-cDNA encoding the ATM protein operably linked to a promoter;

infecting mammalian cells with said vaccinia viral vector, wherein said mammalian cells produce functional ATM protein; and

isolating said functional ATM protein produced by said mammalian cells by binding an anti-ATM antibody to the ATM protein;

wherein the yield of functional ATM protein is at least 2  $\mu$ g substantially purified ATM protein per 300 grams fresh weight of mammalian cells.

18. (currently amended) The method of Claim 17, wherein said ~~the high-yield of~~ functional ATM protein is greater than ~~2-5~~ 2  $\mu$ g substantially purified ATM protein per 300 grams fresh weight of mammalian cells.

**Appl. No.** : 10/042,775  
**Filed** : January 8, 2002  
**Response to** : Office Action dated August 29, 2003

19. (original) The method of Claim 17, wherein said mammalian cells are human cells.

20. (cancelled)

21. (currently amended) The method of Claim 17, where said gene-cDNA encoding the ATM protein is modified to comprise a FLAG epitope.

22. (cancelled)

23. (currently amended) A method for recombinantly producing functional ataxia-telangiectasia (ATM) protein, comprising:

providing a viral vector comprising a gene-cDNA encoding the ATM protein operably linked to a promoter;

infecting mammalian cells with said viral vector, wherein said mammalian cells produce functional ATM protein; and

isolating said functional ATM protein produced by said mammalian cells wherein said functional ATM protein is produced at a level of greater than 2 µg substantially purified ATM protein per 300 grams fresh weight of host cells or host tissue.

24. (previously presented) The method of Claim 23, wherein said mammalian cells are human cells.

25. (previously presented) The method of Claim 23, wherein said isolating said functional ATM protein comprises binding an anti-ATM antibody to the ATM protein.

26. (currently amended) The method of Claim 23, where said gene-cDNA encoding the ATM protein is modified to comprise a FLAG epitope.

27. (previously presented) The method of Claim 23, wherein isolating said functional ATM protein comprises binding an antibody specific for the FLAG epitope to said ATM protein.